

ONTARIO WATER RESOURCES COMMISSION

Stream pollution survey report
Detroit River June 25 to July 25, 1957.

August 1957

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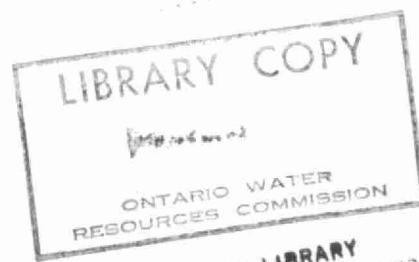
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ONTARIO WATER RESOURCES COMMISSION

STREAM POLLUTION SURVEY REPORT

DETROIT RIVER

June 25 to July 25, 1957

Report by A.J. HARRIS,

August 27, 1957.



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Survey Report - Detroit River

1. This report covers a pollution survey of the Detroit River and its tributaries.

2. Organization of the Survey

The survey was undertaken for submission to the Board of Technical Advisers to the International Joint Commission in accordance with the terms of reference given to the Board by the Commission. It was carried out for the Board by the members of the staff of the Ontario Water Resources Commission.

3. Dates

The field work for the survey was carried out over a period of one month from June 25, 1957 to July 25, 1957.

4. Personnel Participating

A. J. Harris	- Asst. Supvr. Ind. Wastes	O.W.R.C.
A. Lieber	- Lab. Technician	O.W.R.C.
G.G. Ronan	- " "	O.W.R.C.
R.H. MacDonald	- Summer Student	O.W.R.C.

5. Purpose of the Survey

The survey was conducted to determine the present status of the bacteriological and phenolic contamination in the Detroit River.

6. Location of Sampling Points

The sampling ranges used for the survey were similar to those used in the 1946-48 investigation with a few exceptions. Some ranges were discarded and the number of samples across each range was slightly less than those in the 1946-48 survey.

923 samples were examined for phenols from 135 locations and 816 samples were examined from 135 locations for coliforms.

7. Comparison of Results with the 1946-48 Survey

(a) Coliforms

Bacteriological analyses of the samples collected showed that the Detroit River above the Range Dt. 23.1 (Foot of 12th St.

Survey Report - Detroit River

across to Windsor Dock Co.) had similar or slightly less coliforms than in 1946-48, although in this section of the river, the samples collected along the Canadian shore showed an increase in the number of coliforms. There was a general increase in the number of coliforms below the range Dt. 23.1 (Foot of 12th St. across to Windsor Dock Co.), compared to the 1946-48 results. This increase was extended to the mouth of the Detroit River.

(b) Phenols

The Detroit River over its entire length showed less phenol than in 1946-1948. The ranges between the head of the Detroit River and Dt. 19.0 (below Rouge River) were sampled on two occasions on the day following a heavy rain storm. On both sampling days an increase in the phenol was found.

8. Results of Analyses

A Summary of the average analytical results for the bacteriological and chemical examination for phenol is given in the following tables:

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INVESTIGATION OF BOUNDARY WATER POLLUTIONSUMMARY OF AVERAGE ANALYTICAL RESULTS

DETROIT RIVER

JUNE JULY 1957

Sampling Point	Mileage Index No.	Distance from West Shore(feet)	COLIFORMS M.P.N. per 100 MI.				PHENOLS			PPB	
			Median	Maximum	Minimum	No. of Samples	Average	Maximum	Minimum	No. of Samples	
WINDMILL POINT TO HEAD OF PEACH ISLAND	Dt.30.	8w	100	23	540	0	8	0	0	0	10
			400	23	170	0	8	0	0	0	10
			800	20	95	0	8	0	0	0	10
			1500	4.5	79	0	8	0.6	6	0	10
			2500	2	23	0	8	0	0	0	10
			3000	2	< 20	0	8	0	0	0	10
			4000	< 2	47	0	8	0	0	0	10
		7E	200	< 20	< 200	0	8	0	0	0	10
PEACH ISLAND TO CANADIAN SHORE AT HEAD OF DETROIT RIVER	Dt.30.		500	23	240	4	8	0	0	0	10
			800	5400	28,000	2,200	8	0	0	0	10
CONNOR CREEK AT BOOM	Dt.Cn. 30-2		20	1600	240,000+	< 200	8	9.8	45	0	10
			40	17000	240,000+	790	8	9.1	45	0	10

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SUMMARY OF AVERAGE ANALYTICAL RESULTS

DETROIT RIVER

JUNE JULY 1957

Sampling Point	Mileage Index No.	Distance from West Shore(feet)	COLIFORMS M.P.N. per 100 ML.				PHENOLS			PPB	
			Median	Maximum	Minimum	No. of Samples	Average	Maximum	Minimum	No. of Samples	
DETROIT EDISON	DT.29.2W	25	< 200	240,000+	< 2	8	0.8	6	0	10	
BOAT SLIP TO		250	< 200	< 2,000	< 2	8	1	10	0	10	
DETROIT WATER INTAKE BOOM		600	< 200	< 20,000	7.8	8	0	0	0	10	
LAGOON LIGHT,		900	< 200	< 20,000	< 2	8	0	0	0	10	
BELLE ISLE		1300	< 20	< 200	< 2	8	0	0	0	10	
		1700	< 20	< 200	< 2	8	0	0	0	10	
LIVINGSTONE	DT.29.2E	400	13	< 200	< 2	8	0	0	0	10	
LIGHT BELLE ISLE, ACROSS		800	< 20	170	< 2	8	0	0	0	10	
CANADIAN CHANNEL NORMAL		1200	2	1300	6	8	0.2	2	0	10	
TO CENTRE LINE OF STREAM.		1600	350	2400+	< 2	8	0	0	0	10	
		2000	9200	240,000+	350	8	0	0	0	10	
		2400	13,000	240,000+	350	8	0	0	0	10	

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DETROIT RIVER

JUNE JULY 1957

Sampling Point	Mileage Index No.	Distance from West Shore(feet)	COLIFORMS M.P.N. per 100 ML.				PHENOLS			PPB	
			Median	Maximum	Minimum	No. of Samples	Average	Maximum	Minimum	No. of Samples	
PARKE DAVIS & Co. LTD. TO HIRAM WALKER & SONS LTD. CAN.	Dt. 25.7	50	2400	24,000+	180	8	5.3	50	0	10	
		100	2000	24,000+	<2	8	0.3	3	0	10	
		300	170	2,400+	<20	8	0.4	4	0	10	
		600	79	920	<20	7	0.4	4	0	10	
		1000	220	1300	7.8	8	0	0	0	10	
		2000	33	2400	<20	8	0	0	0	10	
		2600	790	2400+	<20	8	0	0	0	10	
		3200	2400+	170,000	1100	8	0	0	0	10	
		3400	6800	130,000	540	8	1.8	8	0	10	
		100	7000	24,000+	110	8	0.4	4	0	10	
FOOT OF 12TH ST. ACROSS TO WINDSOR DOCK CO. CANADA	Dt. 23.1	200	<200	2,400+	49	7	0.4	4	0	10	
		400	170	540	13	8	0.4	4	0	10	
		800	130	920	4.5	8	0.4	4	0	10	
		1100	540	2,400+	4.5	7	0.6	6	0	10	
		1700	430	2,400+	33	8	0.4	4	0	10	
		2100	1600	24,000+	790	8	0.3	3	0	10	
		2200	16,000	240,000	1100	7	0.7	5	0	10	

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DETROIT RIVER

JUNE JULY 1957

Sampling Point	Mileage Index No.	Distance from West Shore(feet)	COLIFORMS M.P.N. per 100 ML.				PHENOLS			PPB	
			Median	Maximum	Minimum	No. of Samples	Average	Maximum	Minimum	No. of Samples	
Above Rouge R. from Delray Detroit Edison Dock to C.I.L. Dock	Dt. 20.6	50	9,200	240,000+	490	6	2.0	8	0	7	
		200	2,400	24,000+	1100	6	1.7	6	0	7	
		400	790	24,000	< 20	6	1.7	8	0	7	
		700	490	4,300	< 20	6	1.3	5	0	7	
		1000	790	24,000+	< 20	6	1.1	4	0	7	
		1500	5,400	24,000+	< 20	6	1.6	7	0	7	
		1800	2,200	16,000	< 20	6	3.6	20	0	7	
		2000	5,400	24,000+	180	6	1.4	5	0	7	
		2200	9,200	24,000+	610	6	1.4	6	0	7	
		2300	9,200	35,000	1,300	6	1.7	8	0	7	
Zug Island Channel at D.T.1. R.R. Bridge	Dt.Zg. 20.3	45	230,000	24M.+	< 200	6	20.7	30	15	7	
Rouge R. (New Channel at D.T.1 R.R. Bridge	Dt.Rg 19.8	70	45,000	24M.+	< 200	6	140	400	8	7	

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Sampling Point	Mileage Index No.	Distance from West Shore(feet)	COLIFORMS M.P.N. per 100 ML.				PHENOLS			PPB	
			Median	Maximum	Minimum	No. of Samples	Average	Maximum	Minimum	No. of Samples	
Below Rouge R. from Detroit Edison Rouge R. Plant to Canadian Br. Co. Ltd. Boat S lip	DT. 19.0	100	24,000+	240,000	200	6	17	30	7	7	
		200	33,000	1.6 M	1800	6	10	15	4	6	
		400	2,400	54,000	<200	6	1.9	7	0	7	
		700	1,700	240,000+	<2	6	2.1	10	0	7	
		1000	780	24,000+	<2	6	1.9	9	0	7	
		1500	3,300	24,000+	170	6	1.7	8	0	7	
		1800	4,900	35,000	<20	6	0.9	6	0	7	
		2200	3 ,500	35,000	<200	6	1.0	7	0	7	
		2400	5,400	24,000+	<200	6	1.1	8	0	7	
		2500	3,300	16,000	680	6	1.0	7	0	7	

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Sampling Point	Mileage Index No.	Distance from West Shore(feet)	COLIFORMS M.P.N. per 100 ML.				PHENOLS			PPB	
			Median	Maximum	Minimum	No. of Samples	Average	Maximum	Minimum	No. of Samples	
Escore Light to Head of Fighting Island	Dt. 17.4W	100	160,000	780,000	130,000	5	6.2	8	3	5	
		200	110,000	240,000+	<200	5	5.2	8	0	5	
		400	24,000	92,000	1,300	5	2.4	4	0	5	
		800	24,000	240,000+	3,300	5	1.8	6	0	5	
		1200	24,000	160,000	3,100	5	0.6	2	0	5	
		1600	11,000	92,000	1,400	5	0	0	0	5	
		1900	7,000	92,000	680	5	0	0	0	5	
		2200	2,700	24,000	2,600	5	0.4	2	0	5	
Fighting Island to LaSalle Oil & Coal Co. Boat Slip	Dt. 17.0E	100	24,000	240,000+	4,600	5	0.4	2	0	5	
		400	14,000	24,000+	2,400+	5	0.8	4	0	5	
		700	16,000	33,000	13,000	5	0	0	0	5	
		980	13,000	27,000	7,000	5	0	0	0	5	

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SUMMARY OF AVERAGE ANALYTICAL RESULTS

DETROIT RIVER

JUNE JULY 1957

Sampling Point	Mileage Index No.	Distance from West Shore(feet)	COLIFORMS M.P.N. per 100 ML.				PHENOLS			PPB	
			Median	Maximum	Minimum	No. of Samples	Average	Maximum	Minimum	No. of Samples	
Southfield Rd. to Fighting Island North Light	Dt. 16.8W	200	24,000+	240,000+	2,400+	5	5.2	8	3	5	
		700	24,000+	92,000	2,400+	5	6	12	2	5	
		1900	24,000	240,000+	2,400+	5	5.8	8	2	5	
		3250	24,000+	240,000+	2,400+	5	5.6	10	2	5	
		3700	11,000	160,000+	2,400+	5	2.8	5	2	5	
		4300	13,000	160,000+	2,400	5	1	3	0	5	
		4400	2,400	3,300	930	5	0	0	0	5	
Ecorse River at Jefferson Ave.	Dt. ER 16.3	30	54,000	280,000	16,000	5	5.6	10	3	5	

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Sampling Point	Mileage Index No.	Distance from West Shore(feet)	COLIFORMS M.P.N. per 100 ML.				PHENOLS			PPB	
			Median	Maximum	Minimum	No. of Samples	Average	Maximum	Minimum	No. of Samples	
Wyandotte City	Dt. 14.6W	100	170,000	1.3M.	26,000	5	4.6	6	3	5	
		200	22,000	240,000+	7,000	5	2.6	4	0	5	
		400	54,000	240,000+	7,000	5	1.2	4	0	5	
		600	35,000	540,000	<2,000	5	0.6	3	0	5	
		800	<20,000	240,000+	8,400	5	0.4	2	0	5	
		1000	24,000	240,000+	2,600	5	0	0	0	5	
		1100	3,300	2.4M.+	<200	5	13.6	60	0	5	
		2000	45,000	2.4M.+	3,300	5	0.4	2	0	5	
		2300	45,000	2.4M.+	1,700	5	0.4	2	0	5	
		3000	4,500	2.4M.+	450	5	1.4	4	0	5	
		4000	2,400+	2.4M.+	<200	5	3.2	8	0	5	
		5000	4,500	2.4M.+	<200	5	2.6	6	0	5	
Trenton Channel Toll Br. from U.S. Mainland to West Shore, Grosse Isle	Dt. 12.0W	100	3,300	240,000+	200	5	5	6	2	5	
		300	35,000	240,000+	22,000	5	4	6	2	5	
		600	54,000	92,000	54,000	5	2.6	4	1	5	
		900	24,000	2.4M.	4,600	5	3.8	13	0	5	

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			Median	Maximum	Minimum	No. of Samples	Average	Maximum	Minimum	No. of Samples	
Monguagan Cr. at Sibley Rd.	Dt. Me 12.2	25	450	160,000	42	5	734	2000	50	5	
Grosse Isle to Canadian Shore Above Island	Dt. 9.3E	100	11,000	54,000	450	5	2	6	0	5	
		200	9,500	240,000	3,300	5	1.2	4	0	5	
		500	17,000	240,000	2,400	5	1.6	4	0	5	
		800	7,900	240,000	2,400	5	1.2	4	0	5	
		1200	35,000	92,000	490	5	1.4	4	0	5	
		1500	22,000	240,000	1,800	5	1.2	4	0	5	
		2000	17,000	54,000	1,400	5	1	3	0	5	
		2500	7,000	54,000	780	5	0.8	2	0	5	
		3000	16,000	54,000	450	5	1.4	4	0	5	
		3600	9,200	54,000	780	5	1.4	4	0	5	
		4500	2,300	24,000	330	5	1.4	4	0	5	
		5000	3,100	22,000	1,300	5	0.8	2	0	5	
		5300	7,900	17,000	3,300	5	0	0	0	5	
		5600	24,000	35,000	2,500	5	0	0	0	5	
		5800	14,000	35,000	1,700	5	1.2	6	0	5	
						0				0	

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			Median	Maximum	Minimum	No. of Samples	Average	Maximum	Minimum	No. of Samples
Maple Beach above Huron R. outlet To Sunset Beach Bar Point (Near Mouth of Detroit River)	Dt. 3.9	500	54,000	240,000+	3,100	5	2.4	4	0	5
		1,500	92,000	220,000	24,000+	5	1.8	3	0	5
		2,500	35,000	240,000+	9,300	5	1.8	3	0	5
		3,500	24,000+	92,000	11,000	5	1.6	4	0	5
		4,500	18,000	54,000	4,500	5	1.2	2	0	5
		5,500	24,000+	92,000	<200	5	1.8	4	0	5
		6,500	16,000	17,000	<200	5	0.8	2	0	5
		7,500	5,400	35,000	1,400	5	0.2	1	0	5
		8,500	4,600	18,000	1,300	5	0.2	1	0	5
		9,500	2,300	24,000	470	5	0	0	0	5
		10,500	2,400+	17,000	1,100	5	0	0	0	5
		11,500	3,300	17,000	700	5	0	0	0	5
		12,500	2,300	24,000	1,100	5	0	0	0	5
		13,500	6,400	160,000	260	5	0	0	0	5
		14,500	11,000	54,000	1,100	5	0.6	3	0	5
		15,500	3,300	24,000+	1,300	5	0	0	0	5
		16,500	2,400	7,000	1,300	5	0	0	0	5

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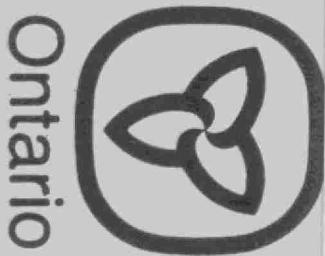
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